APPENDIX B-2: TRUCKING

INDUSTRY PROFILE

The trucking industry provides a vital service to California by serving as the primary mode of transportation for all commodities developed and/or transported throughout the state, including raw materials, works in progress (materials and partly finished products), and finished products. All industries and services, including California's agricultural industry, are dependent on the trucking industry to move their goods from the point of production to market.

Nevertheless, California's trucking stakeholders are currently experiencing a transformative period that is altering how the industry is able to meet the demands of its customers. Technology advancements, increasing regulatory requirements, driver shortages, and infrastructure needs are just some of the issues that are currently being taken on by the trucking industry.

Fleet Inventory

As of January 1, 2013, the Department of Motor Vehicles (DMV) reported that there were 450,866 commercial trucks registered, 5,014,040 non-commercial vehicles and 1,352,056 foreign based international registered plan (IRP) trucks registered in California. As described by DMV, the IRP classification **"**is an option of vehicle registration that allows multi-jurisdiction (interstate) operation of commercial vehicles under a single registration plate and registration certificate (cab card) issued by the registrant's "base" jurisdiction."

As of May 2013, there were over 32,810 trucking companies located in California, most of which are small, locally owned businesses. These companies are served by a wide range of supporting businesses both large and small.

Taxes & Fees

To compensate for their greater impact to the State Highway System (SHS), operators of trucks over 10,000 pounds pay over 20 percent of all revenues collected by California for transportation purposes collected on an annual basis. This is despite the fact that they represent less than 5 percent of all vehicle miles traveled in California. California ranks sixth for the highest highway user taxes and fees in the nation.

The heavy vehicle use tax or HVUT is a fee4 assessed annually on heavy vehicles operating on public highways at registered gross weights equal to or exceeding 55,000 pounds. As of January 2013, a typical five-axle tractor-semitrailer combination paid $9,935 in state highway user fees and taxes in addition to $8,906 in federally user fees and taxes, paying over and above the typical taxes paid by businesses in California.

On the federal level, California truck drivers pay over $1.1 billion annually in fuel taxes, and other various excise taxes that are assessed on the purchase of new equipment and tires.

Agricultural Sector Growth

California agriculture experienced a 15 percent increase in the sales value of its products in 2011, with increases expected to continue in the coming years. California remained the number one state in cash farm receipts with 11.6 percent of the United States (US) total. The state accounted for 15 percent of national receipts for crops and 7.4 percent of the US revenue for livestock and livestock products.

The vast majority of California's agricultural output is handled by a trucking operation at some point from the field of harvesting to the first point of processing. These trucks heavily use rural roads and major agricultural highways in order to move these goods. Although routes

do not experience significant high Average Daily Truck Traffic rates, on an annual basis, they may experience congestion due to seasonality of agricultural production. These roads are absolutely critical to California's economic output.

Trucking Issues and Challenges

Each year, the American Trucking Association (ATA) and the American Transportation Research Institute coordinate on the development of a trucking industry survey. In cooperation "with a group of key industry stakeholders" a "sizable list of issues are identified to be narrowed down" to a final list of twenty critical industry issues. Once the survey is designed along with associated strategies, it is distributed to more than 4,000 industry stakeholders to gauge the importance of each issue and to list the top three. Listed below are the top 10 "most important challenges affecting the industry." Survey respondents represented "industry stakeholders from both the U.S. and Canada and include motor carriers, commercial drivers and other interested parties. For 2013, the following were considered the top challenges:

2013 Top Challenges

- Hours-of-Service
- Compliance, Safety, and Accountability
- Driver Shortage & Retention
- Electronic Logging Mandate
- Truck Parking
- Fuel Supply/Fuel Prices

Hours of Service (HOS)

The new Federal Motor Carrier Safety Administration **(**FMCSA) final ruling on new hours-of-service has created controversy for truckers and regulators. The final rule retains the current 11-hour daily driving limit and the 14-hour work day. FMSCA's primary goal is to reduce driver fatigue, not just for the safety of truck drivers, but for passenger vehicles as well.

The new HOS regulations include the following:

- Limits the maximum average work week for truck drivers to 70 hours, a decrease from the current maximum of 82 hours (under the former rules);
- Allows truck drivers who reach the maximum 70 hours of driving within a week to resume if they rest for 34 consecutive hours, including at least two nights when their body clock demands sleep the most - from 1- 5 a.m.
- Requires truck drivers to take a 30-minute break during the first eight hours of a shift.
- The 14-hour duty period cannot be extended by off-duty time for breaks, meals and fuel stops.
- Each duty period must begin with at least 10 hours off-duty.
- Drivers can work 60 hours on-duty in 7 consecutive days.

Truckers say the ruling hurts their profitability, reduces drivers' hours, and exacerbates the problem of driver shortages and retention. The hours a truck driver may spend behind the wheel per day or per week are a basic building block of any supply chain. Shortening those hours can reduce a truck driver's earnings and make delivering goods on-time more difficult for motor carriers and more costly for shippers. Some shippers and motor carriers have expressed that recent changes to the federal hours-of-service rules for truck drivers have reduced weekly driving time for trucking operations, leading to lost production and increased costs to the industry and costs that will be passed on to consumers.

The Truck Safety Coalition would like to see the rules made stronger, while the ATA filed suit in a Federal Appeals court in Spring 2013 to have the new HOS rules thrown out, on the grounds that the "changes further restrict drivers' ability to work and drive" and "would add tremendous cost to the economy and undue burden onto drivers" referring to the rules as "arbitrary and capricious" while providing minimal possible safety and health benefits. Furthermore, they questioned the validity of the cost-benefit analysis the FMCSA used to evaluate the proposal.

Compliance, Safety, Accountability (CSA)

CSA was first implemented nationally by the FMCSA in late 2010. The initiative aims to improve large truck and bus safety and ultimately reduce crashes, injuries, and fatalities that are related to commercial motor vehicles (CMVs). CSA collects and reports safety data concerning commercial motor vehicles including safety violations and crash statistics. It is an enforcement and compliance tool that is based on statistical likelihood of an accident and breaks it into seven categories called Behavior Analysis and Safety Improvement Categories (BASIC). It is a three part model that includes measurement, evaluation and enforcement. Categories include unsafe driving, vehicle maintenance, cargo related, crash indicator, fatigued driving, driver fitness, and controlled substances. Each carrier is evaluated on a BASIC rating scale from 1 to 10 with 10 being the most severe violations. Ratings are determined based combining the time (more recent violations are weighted more heavily), the number of violations, and the severity of the violations using 24 months of performance data.

Intervention is done based on the evaluation by either the FMSCA or the individual state. Interventions can be early contact, investigation and follow-on. The goal is to inform and educate carriers before penalties are imposed.

However, the methodology has been subject to criticism over truck crash accountability because it does not consider who is at fault. A truck accident is documented against the motor carrier regardless of which party is at fault.

Driver Shortage & Retention

Trucking companies have been facing a labor shortage for years. Although US Bureau of Labor Statistics (BLS) estimated that 40,000 truck drivers were hired in a 1-year period in 2012-2013, there is still an estimated shortage of about 30,000 drivers. Also, according to the BLS, the US will need 330,000 more truck drivers by 2020 just to keep current freight levels moving.

One of the contributors to the driving shortage is an aging workforce. The average age of a commercial truck driver in the US is 55 years. Since 2000, the number of service and truck drivers 55 or older has surged to 19% or about 616,000 according to BLS (according to Bloomberg Businessweek, November 14, 2013).

In California, the causes of the truck driver shortage are diverse. However, one area of concern is the lack of a "Commercial Violator School" process that would allow commercial drivers to attend a traffic school for minor infractions given in commercial vehicles. Progress was made in 2012 when the legislature passed AB 1888, allowing commercial drivers to attend traffic school for violations given while they drive their personal vehicles.

Electronic Logging Mandate

New regulations will require electronic on board recorders (EOBR) to be attached to commercial motor vehicles to log HOS. The intent of HOS regulation is to prevent driver fatigue and address driver safety issues by limiting the amount of hours available for drivers to spend operating a commercial vehicle. However, there is some controversy regarding the use of EOBR devices. A driver must manually input into the EOBR when they are not driving since they do not automatically record changes when a driver is off-duty. A driver could be on-duty and not driving but performing functions such as loading and unloading, inspecting or repairing the truck, completing paperwork, etc. which count towards HOS. There is also the time spent waiting to enter port terminals and at other freight facilities waiting for trailers to be loaded and unloaded. Since the driver control's the EOBR, compliance is dependent on the driver's observance of the regulation.

At this time, US Department of Transportation (USDOT) published a notice of rulemaking (60 days), FMSCA will adjust the rule based on public feedback which could take 3-9 months, and the effective delay of the new rule will be two years after the final rule.

Truck Parking

It has long been acknowledged that a shortage exists for adequate and safe parking for commercial motor vehicle operators on both a national and state level. The demand for commercial vehicle parking far exceeds capacity. When originally conceived, public rest areas were meant to be temporary rest areas for short term safety breaks for the traveling public. As the trucking industry expanded, these rest areas began to serve as long-term parking for long-haul commercial vehicle operators contributing to overcrowding at rest areas.

The National Transportation Research Boards National Cooperative Highway Research Program, Synthesis 317: Dealing with Truck Parking Demands 2003, found that "most parking supply is located in commercial truck parking lots and plazas and the overcrowding problem concentrates in public rest areas." Factors contributing to the commercial vehicle parking include poor geometric design of facilities and access; lack of information on space availability including amenities at the locations; and lack of security.

Because of the limits on stays in public facilities and parking space shortages, truckers have few alternatives. They can be found parked underneath overpasses, on roadway access ramps and on shoulders to get rest. However, besides causing damage to this infrastructure, it creates a safety risk for the driver and other users of the corridor, particularly limiting the ability of the parked vehicles when leaving to enter into the traffic stream because of the time it takes to accelerate the vehicle. In addition, "errant vehicles" may stray into these areas and strike parked vehicles. Private truck stops are not always available to provide long-term parking. Lack of facilities can influence which route is taken with route selection being based on the available of amenities, whether the trip is a long or short haul, time of day, and need for staging areas.

Legislation: Legislation (Title 23, Section 752.3 of the Code of Federal Regulations) defines a safety area as "a roadside facility safely removed from the traveled way with parking and such facilities for the motorist deemed necessary for his rest, relaxation, comfort and information needs." US Code 23, § 111, places limits on the commercialization of rest areas on the interstate highway system.

Moving Ahead for Progress in the 21st Century (MAP-21): MAP-21 does not include a formal truck parking program; however, it did make truck parking eligible under the National Highway Performance Program, the Surface Transportation Program and the Highway Safety Improvement Program. Projects eligible to receive funding include:

- Construction of safety rest areas with truck parking
- Construction of truck parking areas adjacent to commercial truck stops and travel plazas
- Opening existing facilities to truck parking, including inspection and weigh stations and park-and-ride facilities
- Promoting availability of publicly or privately-provided truck parking on the National Highway System (NHS)
- Construction of turnouts along the NHS for commercial motor vehicles
- Making capital improvements to public truck parking facilities closed on a seasonal basis that will allow those facilities to remain open all year
- Improving the geometric design of interchanges on the NHS to improve access to truck parking facilities.

Jason's Law: Jason's Law makes construction of safety rest areas, commercial motor vehicle (CMV) parking facilities, electric vehicle and natural gas vehicle infrastructure eligible for Federal funding. It also requires USDOT to survey States within 18 months of enactment regarding their CMV traffic and capability to provide CMV parking. DOT must periodically update this survey and post the results.

Fuel Supply/Fuel Prices

In 2008, for the first time diesel prices were over $4 per gallon. At the time of this writing, gas prices have come down significantly; however, diesel prices have fallen only modestly. The Department of Energy's Energy Information Administration weekly report shows that for the week ending December 1, 2014, national diesel prices "fell 2.3 cents to $3.605…the lowest national average since February 2011" (Gasoline and Diesel Fuel Update). For California, the cost was $3.726 for the same time period.

Diesel prices are trending lower; however, it is difficult to predict prices since there are many factors involved such as the cost of crude, international energy demand, oil supply, taxes, and the future of the U.S. shale production. In California, the cap-and-trade for fuels regulation adopted by the California Air Resources Board (ARB) will increase diesel fuels costs beginning January 1, 2015. ARB expects the costs to increase by 10 cents per gallon and then will increase over time

Trucking companies have to cover increased costs out of pocket, and eventually recoup the money by passing the cost on to the consumer.

TRUCK ROUTES & INFRASTRUCTURE NEEDS

The SHS has reached capacity, especially in urban areas of the state. Truck routes are designated by Caltrans for the state highway facilities and by the cities in the Bay Area. Caltrans have four primary categories of truck routes:

- Surface Transportation Assistance Act (STAA) Routes and Terminal Access Routes – STAA routes are part of a national network and allow tractor-semis more than 65 feet in length or with more than 40 feet kingpin-rear axle length up to the legal weight limits for the state. Terminal access routes provide STAA trucks with legal access to and from the STAA network and major truck terminal concentrations.
- California Legal Routes – Routes where it is legal for tractor-semis with an overall length up to 65 feet and 40 feet kingpin-rear axle length to travel.
- King Pin-Rear Axle Advisory Routes – Routes where the state advises against travel by tractor-semis with kingpin-rear axle length over the posted value.
- Routes with Operational Restrictions

The trucking industry heavily utilizes these routes and depends on well maintained roadways to deliver goods to customers located throughout the state. For the trucking industry, the most significant element of California's infrastructure need is the estimated $79.7 billion in revenues that would be needed just to maintain and operate the existing highway system between now and 2020.

California's trucking industry is concerned about our state's ability to meet these maintenance needs.

State Highway System Profile

Lane-Miles	50,486
Centerline Miles	15,133
# of State Highways	265

Centerline Miles – Rural/Urban Breakdown

Rural	10,744	71%
Urban	4,389	29%
Non-Freeway/Non-expressway	4,308	29%
Freeway/Expressway	10,825	71%
Non-Interstate	2,453	16%
Interstate	12,680	84%

Urban Concerns

In California, a complex process of authorizing STAA routes, as well as varying STAA enforcement between local, regional and state agencies, has made traveling in urban areas increasingly difficult for truck operators. Additionally, poor signage and infrequent review of connectivity to growing truck destinations and of routes across jurisdictions is a truck route problem that needs further attention.

As a result, truckers, law enforcement, and municipalities face misinformation on the accessibility of routes that can provide access to food, shelter, and safety. In urban areas, increased collaboration between municipal governments, transportation planners, industry stakeholders, and law enforcement is needed.

Shippers may have to start locating distribution centers closer to consumers, as growth in E-commerce is pressing retailers to deliver goods inexpensively and quickly, and challenging traditional logistics models. Since 2000, growth in e-commerce has been significant, with a 19 percent compound annual growth rate through 2013, this trend in e commerce will create truck delivery challenges in urban areas.

WEIGHT AND LENGTH LIMITS

Caltrans has discretionary authority to issue special permits for the movement of vehicles and loads that exceed statutory limitation on size, weight, and loading of vehicles contained in Division 15 of the California Vehicle Code (CVC). Permit applications for noncompliant loads and vehicles are administered through the Transportation Permit Branch of the Office of Truck Safety.

Weight Limit

To preserve the highway system, the CVC regulates the maximum load weight that may travel on its roads. As a general rule, no vehicle may exceed a gross weight of 80,000 pounds, though how that weight is distributed on a load may reduce the overall maximum load. Trailers and vehicles with single-axle arrangements may only carry 20,000 pounds per axle, while grouped axles bunched closer than 8 feet, 6 inches may carry up to 34,000 pounds per axle group. Weight limits for grouped-axle vehicles with axles spread farther than 8.5 feet vary by the number of distance between the axles. See the California Department of Transportation's (Caltrans) Weight Limit chart for specifics.
http://www.dot.ca.gov/hq/traffops/engineering/trucks/trucksize/weight.htm

Weight Limit Exceptions

Trucks pulling shipping containers on portions of State Route 1 between Los Angeles and Long Beach may be exempt from normal weight limitations, with a maximum weight limit of 95,000 pounds in certain criteria. Log haulers may carry up to 35,500 pounds on tandem axles if they operate on roads that are part of the National Network.

Length, Height and Width Limits

A single truck without a trailer may not be longer than 40 feet in total, and no load may exceed 65 feet long on these vehicles. Semi-trucks pulling a trailer may be up to 65 feet long, so long as neither portion of the vehicle is more than 28.5 feet long; trailer measurements are made from the kingpin to rear axle.

Trucks on SHS must be less than 14 feet high from the ground, although a few state routes have clearances less than 14 feet. Trucks may not be wider than 102 inches. Clearance and street widths on local routes may be less than that on state and federal highways. Caltrans website provides a list of state routes and overpasses that are less than normal clearance: Http://www.dot.ca.gov/hq/traffops/engineering/trucks/

Oversized Loads

For a heavy haul or bulky cargo, Shippers needing to haul heavy or bulky cargo may apply for an oversized load permit from Caltrans. These permits are granted on a case by case basis.

Compilation and Study of Truck Size and Weight Limits

MAP-21 requires the USDOT, in consultation with States and other relevant Federal agencies, to report to Congress within two years of enactment on a comprehensive study of truck size and weight limits [§32801]. In addition, they are required to complete a compilation of State limitations on the size and weight of trucks that may travel on the National Highway System. [§32802]

Categories of Truck Tractor-Semitrailers

The two categories of truck tractor-semitrailers in California are: (1) the "green" trucks (interstate "STAA" trucks) and (2) the "black" trucks (California Legal trucks). This table shows the maximum allowed lengths for the two categories of truck tractor-semitrailers:

LENGTHS	"GREEN" STAA TRUCKS		"BLACK" CALIFORNIA LEGAL TRUCKS
	STAA 53 FT.	STAA 48 FT.	CA LEGAL
OVERALL LENGTH	unlimited	unlimited	65 feet MAX
SEMITRAILER	53 feet MAX	48 feet MAX	unlimited
KPRA (kingpin-to-rearmost-axle distance)	40 feet MAX (for two-axle semitrailer); 38 feet MAX (for single-axle semtrailer)	unlimited	40 feet MAX (for two-axle semitrailer); 38 feet MAX (for single-axle semtrailer)

Doubles: For maximum allowed lengths of STAA and California Legal doubles (truck tractor-semitrailer-trailers), see the doubles on this Caltrans web page: http://www.dot.ca.gov/hq/traffops/engineering/trucks/truckmap/truck-legend.pdf.

California Legal Routes

California (CA) legal trucks can travel on STAA Routes and Advisory routes. CA legal trucks have access to the entire SHS except where prohibited.

CA Legal Truck Tractor - Semitrailer

Semitrailer length: No limit
Kingpin to rear axle (KRPA):
40 feet maximum for two or more axles
38 feet maximum for single-axle trailers
Overall Length: 65 Feet maximum

CA Legal Truck Tractor – Semitrailer – Trailer (Double)

Option A
Trailer length: 28feet 6 inches maximum (each trailer)
Overall Length: 75 feet maximum
Option B
Trailer length: one trailer 28 feet 6 inches maximum other trailer may be longer than 28 feet 6 inches)
Overall Length: 65 feet maximum

Surface Transportation Assistance Act (STAA) Routes

Interstate "STAA" Truck Tractor – Semitrailer

Semitrailer length: 48 feet (ft) maximum
KRPA: No limit
Overall length: No limit

Semitrailer length: over 48 ft. up to 53 ft. maximum
KRPA: 40 feet maximum for two or more axles
Overall length

Interstate "STAA" Truck Tractor – Semitrailer – Trailer (Doubles)

Trailer length: 28 ft. 6 inches maximum for each trailer
Overall length: No length

National Commercial Vehicle Weight Standards

Source: Federal Highway Administration (FHWA), Freight Management and Operations

National weight standards apply to commercial vehicle operations on the Interstate Highway System, an approximately 40,000-mile system of limited access, divided highways that spans the nation. Off the Interstate Highway System, states may set their own commercial vehicle weight standards.

Federal commercial vehicle maximum standards on the Interstate Highway System are:

Single Axle:	20,000 pounds
Tandem Axle:	34,000 pounds
Gross Vehicle Weight:	80,000 pounds

Bridge Formula Weights: The bridge formula was introduced in 1975 to reduce the risk of damage to highway bridges by requiring more axles, or a longer wheelbase, to compensate for increased vehicle weight. The formula may require a lower gross vehicle weight, depending on the number and spacing of the axles in the combination vehicle.

National vehicle size standards apply on what is known as the National Network of highways. The National Network includes: (1) the Interstate Highway System and (2) highways, formerly classified as Primary System routes, capable of safely handling larger commercial motor vehicles, as certified by states to FHWA. The total National Network system is about 200,000 miles. (See table for specific limits.)

Federal Commercial Vehicle Size Limits on the National Network

Overall vehicle length	No federal length limit is imposed on most truck tractor-semitrailers operation on the National Network. **Exception:** On the National Network, combination vehicles (truck tractor plus semitrailer or trailer) designed and used specifically to carry automobiles or boats in specially designed racks may not exceed a maximum overall vehicle length of 65 feet, or 75 feet, depending on the type of connection between the tractor and trailer.
Trailer length	Federal law provides that no state may impose a length limitation of less than 48 feet (or longer if provided for by grandfather rights) on a semitrailer operating in any truck tractor-semitrailer combination on the National Network. (A state may permit longer trailers to operate on its National Network highways.) Similarly, federal law provides that no state may impose a length limitation of less than 28 feet on a semitrailer or trailer operating in a truck tractor-semitrailer-trailer (twin-trailer) combination on the National Network.
Vehicle width	On the National Network, no state may impose a width limitation of ***more or less*** than 102 inches. Safety devices (e.g., mirrors, handholds) necessary for the safe and efficient operation of motor vehicles may not be included in the calculation of width.
Vehicle height	No federal vehicle height limit is imposed. State standards range from 13.6 feet to 14.6 feet.

Penalties for Non-Compliance with Federal Standards

Weight Standards: A state is subject to loss of its ***entire*** National Highway System apportionment if its laws or regulations establish weight limits for commercial motor vehicles operating on the Interstate Highway System that are either higher or lower than the four federal weight standards mentioned above. The only exception relates to changes affecting established "grand-father" limits; although a state may not set weight limits above a grandfathered maximum, it may set them below the maximum, provided such a limit is not below the corresponding federal standard.

Size Standards: A state that violates federal statutes on commercial vehicle size, or the implementing regulations, is subject to a civil action in federal district court for injunctive relief, in accordance with 49 US Code 31115, "Enforcement." The action will be brought by the Department of Justice on behalf of FHWA.

Reporting Requirements: Each year, states must provide the FHWA with both a plan and a certification of accomplishment of planned size and weight enforcement activities. Failure to certify, or inadequately enforce all state laws affecting maximum size and weight on Federal-Aid highways, despite the provision of certifying documents to FHWA, can result in a 10 percent reduction of all Federal-Aid highway funds to the state for the next fiscal year.

State Exceptions and Variations

In addition to the general standards described, federal law includes provisions, exemptions, and variations applicable to particular states, routes, vehicles, or operations. For more details, please consult 23 Code of Federal Regulation (CFR), Part 658, available on FHWA's Office of Freight Management and Operations website www.ops.fhwa.dot.gov/freight/regulate/SW.

Motor Carrier Permit

A motor carrier permit (MCP) is a document issued by the Department of Motor Vehicles (DMV) Registration Operations Division. The permit is issued to motor carriers as evidence of the registration with the DMV of their Carrier Identification number (CA#), as required by California Vehicle Code, Section 34620. Additionally, the permit verifies the motor carrier has met all of the statutory requirements to commercially operate motor vehicles on California's highways. The permit contains information specific to the motor carrier (e.g., name, mailing address, CA#, and effective/expiration dates of the permit).

A Motor Carrier Permit (MCP) is required for any person or business entity that is paid to transport property in their motor vehicle regardless of vehicle size or weight and issues and is issued by the California DMV). Persons who transport property for compensation are deemed a 'For-Hire' motor carrier. Generally, any person or business entity operating a commercial vehicle with a Gross Vehicle Weight Rating (GVWR) of 10,001 pounds or more, either for business or personal use are required to have a MCP. Persons operating such vehicles are deemed as a 'private' motor carrier.

In State Carriers: A motor carrier who operates only within the state of California must obtain a "motor carrier of property" permit from the Motor Carrier Services Branch, MCP Operations Unit of the DMV.

Out of State Carriers: An out-of-state motor carrier must obtain the MCP if they are both delivering and picking up loads in California and is subject to the Unified Carrier Registration Act of 2005 (UCR) requirements. Additional information about UCR may be obtained at http://www.dmv.ca.gov/mcs/mcs.htm.

ENVIRONMENTAL EFFORTS

California's Truck and Bus regulation requires diesel trucks that operate in the state to be upgraded to reduce emissions. Beginning in 2012, certain model years of heavier trucks needed to be retrofitted with expensive particulate matter filters. Beginning on January 1, 2016 nearly all trucks in the State of California will be either retrofitted or retired. By January 1, 2023, nearly all trucks will need to have 2010 model year engines.

In today's engines, diesel particulate matter has been virtually eliminated, with actual emissions having fallen by 99.9% in the past 25 years.

Various groups including California Air Resources Board, CalHEAT, and California's trucking industry are also investing in demonstration projects of further advanced technologies which have the potential to move the industry from near-zero emissions to true zero emissions in the future.

Although the regulation is leading to substantially reduced emissions, with key emissions expected to be cut by 80-90 percent. Future projections show that, despite healthy projected growth, these emissions will remain greatly reduced for decades to come.

The trucking industry has had to make significant investments in order to comply with the mandates of the regulation. California's trucking industry is on pace to invest approximately $1 billion annually in cleaner equipment from 2008 to 2023. While public incentive money is available, the vast majority of the balance is being paid by private industry.